HD-11 SET UP

THE HD-11 IS SHIPPED WITH BOTH THE WINCHESTER DISK PLATTER AND THE DRIVE HEADS SECURED FOR SHIPMENT. THE FOLLOWING PROCEDURE TO REMOVE THE SPINDLE LOCKING SCREW AND THE HEAD ACTIVATOR LOCK MUST BE FOLLOWED TO AVOID DAMAGE AND TO INSURE CORRECT OPERATION OF THE DRIVE.

I. UNPACKING:

Place the HD-11 on a sturdy table and inspect it for any visible shipping damages.

All HD-11's come with the following material:

a. HD-11 cabinet with a 50 conductor ribbon cable exiting from the rear panel.
b. Grounded AC power cord (do not defeat the grounding prong).
c. Set of slides and mounting hardware.
d. HC-210 (the HD-11 interface card).
e. HD-11 WINCHESTER DISK SYSTEM USERS MANUAL.
f. Rubber feet mounted on the cabinet at the factory (removable for rack mounting).
g. (HD-11T ONLY) Tape cartridge with CRDS HD-11 Disk Diagnostic and transfer software V3.6. This is a copy of the "SP" section of the disk.
h. (HD-11T ONLY) SYSTEM Software on tape cartridge (optional).

II. UNLOCKING THE HD-11

A. Unlocking the disk platter.

NOTE: MAKE CERTAIN THAT THE POWER CORD IS NOT CONNECTED TO THE HD-11.

The HD-11 requires two fuses to be installed into fuse holders located on the rear of the cabinet. These fuses and fuse holder caps have been removed and placed in plastic bags inside the HD-11 cabinet to insure the proper unlocking sequence for the platter and heads.

Remove the cabinet lid by turning the six Camloc Fasteners ½ turn counter clockwise and lifting the lid up and back. Disconnect the plugs to the front panel mounted write protect switch printed circuit board and remove the HD-11 front panel by unscrewing the four knurled nuts which are located behind the front panel (two per side) and pull the panel off.

Attached to a "ty-wrap" in the middle of the HD-11 is a plastic bag with one of the fuses and fuse holder caps. Reference Figure 1. Unscrew and remove the platter locking screw that is attached to this "flag pole" and bag. The platter is now free to rotate. Install the fuse and cap into the bottom fuse holder.

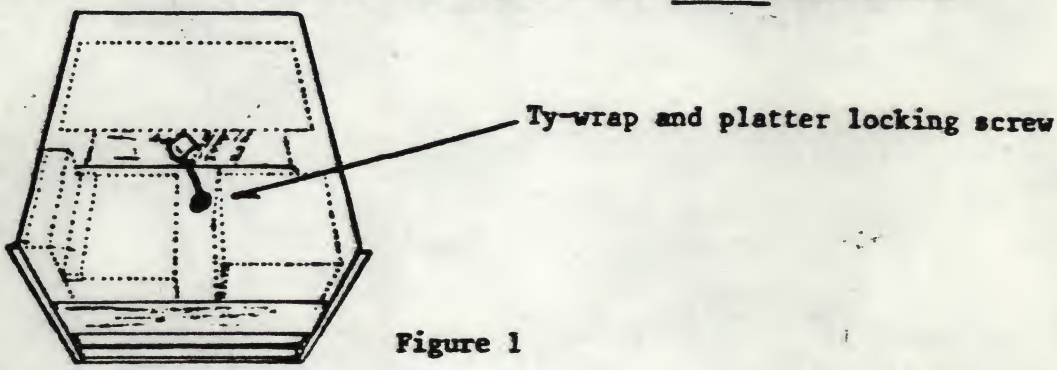

Figure 1

B. Unlocking the heads:

Remove the paper label from the center of the rear panel and insert the power cord. Apply power to the HD-11 via the red power control switch labelled "ON" and "OFF" located near the fuse holders.

NOTE (1): The top fuse should not yet be installed.

NOTE (2): On startup, the Winchester drive may make a great deal of noise lasting about 10 or 15 seconds caused by slippage of the drive clutch. If this noise doesn't stop within 30 seconds, turn the machine off. You may be connected to an incorrect power source.

Remove the plastic bag that is taped to the front of the Winchester disk. This bag contains the other fuse and cap. Reach into the space between the disk and power supply mounting plate and, with power applied, gently pull out the black plastic "clothes pin" head lock. (Figure 2)

IMPORTANT: Retain the "clothes pin" head lock for re-installation prior to transporting the drive.

It is recommended that the drive heads be moved to the extreme inside tracks whenever the drive is moved and always prior to re-installation of the drive activator lock.

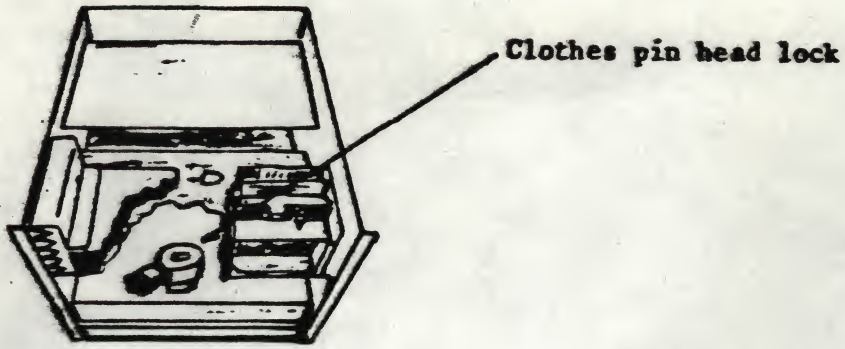

Figure 2

Operate the red power switch to OFF and install the second fuse and cap into the top fuse holder.

Replace the front panel and secure using the four knurled nuts. Connect the gray cable to the pins on the right hand side of the write protect PCB (viewed from the front of the HD-11). This connector is keyed and will only fit one way. Connect the two wire (green and yellow) connectors to the three pins on the left side of the write protect PCB.

NOTE: The yellow wire must connect to the center pin; the green wire may connect to either the top or bottom pin.

Replace the lid and lock in place by rotating the six camloc fasteners ½ turn counter-clockwise. The HD-11 is now ready for installation and operation.

III INSTALLATION:

A. SETTING UP: Before proceeding, MAKE CERTAIN THAT BOTH THE HD-11 AC POWER AND THE COMPUTER AC POWER IS OFF.

In order for the HD-11 diagnostics and transfer software to run, the host computer system must have at LEAST:

a. An LSI-11 or LSI-11/23 processor.
b. 28K (words) of memory.
c. A console terminal interface board (DLV-11F, DLV-11J, or MXV-11).
d. HC-210 (the HD-11 interface card).

In the CPU card cage, the processor must be in cage location 1. The rule for installing all other boards is: All slots must be full between any board and the processor.

Below is a SUGGESTED MINIMAL card cage configuration:

1	PROCESSOR		MEMORY	2
4		HC-210		3
5	DLV-11(F or J)			6
8				7

(Viewed with the board handles visible)

The HC-210 (the HD-11 interface module) is factory set as per note 1 below, and is ready to be installed into any Q-bus slot. Slide the board into a quad-wide slot and firmly push on the handles to seat.

NOTE (1): The HC-210 interface card comes with its "boot" enabled (@773000).
The CSR address is 774400.
The interrupt vector is 160.
The interrupt level is 4.

NOTE (2): Termination is only needed when more that 20 AC bus loads are present on the bus. This is typically 8 to 10 modules (boards).

NOTE (3): ONLY ONE BOOTSTRAP DEVICE CAN BE ENABLED AT A TIME. If you have other boot devices (FC-202 or DEC BDV-11), one of them must be chosen as the sole boot device.

Connect the ribbon cable from the HD-11 to the HC-210 interface card. The cable is keyed with two keying tabs - the red stripe on the cable is to the right (see figure 2-3 in the HD-11 USERS MANUAL).

B. HD-11 CHECK-OUT

Connect the HD-11 to a power source and turn it on with the red switch located on the rear panel of the cabinet. The Winchester drive may again make quite a lot of noise for about 10 or 15 seconds.

The "READY" light on the HD-11 will come on in about 2 minutes. (If it doesn't: turn the HD-11 and computer power off and check your connections and power sources.)

Now turn on your computer. Make sure that the computer is in the "ENABLE" mode (the HALT/ENABLE switch is in the ENABLE position). Boot the system.

If you are using the HC-210's bootstrap (it comes enabled from the factory), an asterisk will be displayed on your terminal.

Type: "sp <CR>". This boots the special programs.

If you are not using the HC-210 bootstrap, see page 3-7 of the HD-11 USERS MANUAL for instructions on booting the special programs via ODT.

Within 5 seconds the screen should display:

"CRDS HD-11 SUPPORT SOFTWARE VERSION 3.6 SEP 11 1980
CONTROLLER ADDRESS (174400):".

Respond to the controller address question with a "<CR>".
Respond to the vector question with a "<CR>".
This selects the default values of 774400 and 160 (this is the factory configuration).

If the system clock is not on, the diagnostic will ask you to turn it on. If your system has no clock (LTC), you may ignore this prompt for now and continue.

RUNNING THE DISK DIAGNOSTICS:

Select item 4 (disk diagnostics) from the menu: "4 <CR> ".

Respond to the "change options" question: "<CR>".

Select item 3 (quick test):
This test will take about 5 minutes to finish (a summary will be displayed at the end of this test or whenever "control C" is typed). If no errors were reported, continue the initial check-out.

Select item 9 (overnight test):

Let this test run for about 1 hour. Type "control C" to get an error report. There should be no errors reported. After the hour is up, type "ESC" to exit this test.

If both of these tests execute with no errors, the proper operation of the HD-11 is assured.

The HD-11 is now ready to be loaded with your system software, but, PLEASE read the manual.

RUNNING THE TAPE DIAGNOSTICS (HD-11T ONLY)

To test the tape drive, a write enabled tape cartridge is required

NOTE: A tape cartridge is write enabled when the arrow on the plastic screw which is located on the top left of the cartridge is pointing away from "SAFE".

Type 3 "⟨CR⟩"'s, this will bring you back to the first menu in the diagnostic.

Insert the tape into the HD-11T (metal plate down). This causes the tape to seek forward, and then rewind to the beginning of the tape.

Select item 5 (diagnose tape): "5 ⟨CR⟩".

Respond to "Change options" and "Report soft errors" with "⟨CR⟩".

Select item 3 (Condition tape): "3 ⟨CR⟩".
This moves the tape forward to the end of tape and then rewinds. This procedure homoginizes the tape tension. It should always be done before using any new tape.

NOTE: This procedure requires the LTC clock to be on. However, if you don't have a clock, reboot your system 1 minute after you started this condition procedure and select item 5 again. This procedure will homoginize the tape as well.

Select item 0 (test by list): "0 ⟨CR⟩". This will display another menu.
Select item 2 (quick test): "2 ⟨CR⟩".
Execute one pass.
Do not halt on error.

This test will execute for about 5 minutes and exercises all tape functions.
The completion of this test with only soft errors reported, indicates a functioning tape drive and tape cartridge.

C. The HD-11 is now ready to be loaded with your system software, but, PLEASE read the manual.

THE HD-11 EMULATES FOUR DEC RL01's, BUT IT HAS DIFFERENCES - PLEASE READ THE ENTIRE HD-11 MANUAL TO LEARN ABOUT THE DIFFERENCES, BEFORE YOU CONTINUE TO USE THIS MACHINE.

NOTE: If you are going to use RT-11, you must do a sysgen in order for the logical RL01 unit 2 and unit 3 to respond.